

## *Myosomatoides* Gen. Nov., (Hymenoptera: Braconidae), A Neotropical Larval Parasitoid of Stem-borer Pests, *Diatraea* (Lepidoptera: Pyralidae)

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*Abstract.* - A new genus, *Myosomatoides* Quicke (type species: *Myosoma pennipes* Westwood 1882), from South America is described and illustrated. *Ipobracon pennipes* Myers 1931 (non Westwood), originally recorded as a parasitoid of an unspecified *Diatraea* species from British Guiana and subsequently reared from *D. angustella* Dyar, is congeneric with *Myosomatoides pennipes* (Westwood) comb. nov. and is therefore a junior subjective homonym of the former. A new name, *Myosomatoides myersi* is proposed for Myers's species and a key is provided to enable its separation from *M. pennipes* (Westwood) comb. nov.

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### INTRODUCTION

*Diatraea*, a large genus of New World pyralid moths, whose larvae bore in the stems of graminaceous plants, includes several species of considerable economic importance in both the temperate and particularly the tropical regions where they attack sugarcane, corn and sorghum (Elias 1970, Chippendale 1979, Agnew et al. 1988, Pashley et al. 1990). Several genera of parasitic wasps of the braconid subfamily Braconinae have been recorded as attacking species of *Diatraea*, viz. *Bracon* Fabricius (Muesebeck 1925, Shenefelt 1978), *Digonogastra* Viereck (Wharton et al. 1989), *Myosoma* Brullé (Quicke 1989) and *Palabracon* Quicke (Quicke 1988a). All of these are believed to be ectoparasitoids attacking relatively late instar host larvae. In addition to these, Myers (1931) described and illustrated three species of Braconinae reared from *Diatraea* spp. in British Guiana, all of which he placed in *Ipobracon* Thomson, though he recognized that one of his new species, *I. pennipes* Myers (non Westwood), was an "isolated species". *Ipobracon* was subsequently shown to be a junior synonym of *Cyanopterus* Haliday (Quicke 1985, 1987) and the limits of that genus were restricted such that the great majority of New World species described under both *Ipobracon* and *Iphiaulax* Foerster, and including the other two species described by Myers, actually belong to a distinct, though related genus,

*Digonogastra* Viereck (Quicke 1988b, Wharton et al. 1989). As Myers implied; however, *I. pennipes* does not belong to *Digonogastra*, and in fact, it is a member of a new genus near *Myosoma* Brullé which is described below.

By coincidence, Westwood (1882) had earlier described another species belonging to the same new genus under the name of *Myosoma pennipes*, which therefore becomes a senior, subjective homonym of *pennipes* Myers. In addition to the type specimens of *Myosomatoides pennipes* (Westwood) comb. nov. (Hope Entomological Collections, Oxford) and *M. myersi* comb. et nom. nov. (Natural History Museum, London: type no. 3<sup>c</sup> 418) the author has seen seven other specimens belonging to the new genus from Argentina, Brazil, Colombia, British Guiana, Ecuador, Paraguay, and Peru, though none of these has any associated host data. Both *M. myersi* and *M. pennipes* appear to be widespread in South America.

Available material suggests that there are only two species of *Myosomatoides* in South America, viz. *M. pennipes* and *M. myersi* nom. nov. A key is provided to enable their separation. Some variation is apparent for both species. In particular, specimens of *M. pennipes* vary in the extent of the black coloration on the body, the wing coloration, the extent and length of setosity, the degree of compression of the hind leg, the shape of the head, the relative lengths of hindwing veins 1r-m and SC+RI, and the relative length of the ovipositor.

Because no two specimens examined were found to be entirely similar, I consider it most likely that they represent a single rather variable species rather than a diverse polyspecific complex though the latter possibility cannot be completely excluded.

Myers (1931) provided a fairly complete description of *M. myersi* (= *pennipes* Myers non Westwood), in which he illustrated the rather distinctive metasoma. Following Myers' original record, the species was recorded as a parasitoid of *Diatraea*, on several further occasions (Myers 1932, Thomson 1953) and, in particular, of *D. angustella* Dyar in Argentina (Parker et al. 1953, De Santis & Esquivel 1966). Members of the related genus *Myosoma* are similarly idiobiont ectoparasitoids of stem-boring pyralid moth larvae, including *Diatraea* and *Chilo* species (Quicke 1989, Quicke & Wharton 1989). At least one species of *Myosoma* is gregarious.

*Myosomatoides* is being described here to make the name available to biocontrol workers in South and Central America and for a forthcoming manual to the New World genera of Braconidae (Marsh & Wharton, in preparation).

Terminology follows that of Achterberg (1979, 1988).

#### MYOSOMATOIDES Quicke gen. nov.

Type species: *Myosoma pennipes* Westwood, 1882.

*Diagnosis*.—Superficially similar to *Myosoma* except that the 2nd metasomal tergite is strongly pinched-up in the middle to form a mid-longitudinal ridge (Fig. 4). In addition, the hind femur and tibia are extremely broad and laterally compressed and have very long, dense setosity (Fig. 3). In Quicke & Sharkey's (1989) key to the North American genera of Braconinae, *Myosomatoides* will key to *Bracon* Fabricius, from which it can be distinguished by its extremely compressed hind femur and tibia.

*Description*.—Head. Antenna with approximately 50 flagellomeres. Terminal flagellomere acuminate. Medial flagellomeres wider than long. Scapus small, shorter ventrally than dorsally in lateral aspect, emarginate apico-laterally, not emarginate apicomediaally. Clypeus very shallow; without a transverse carina separating reflexed ventral part from dorsal part; dorsal part punctate. Clypeus

separated from face by weak groove. Malar area weakly impressed, punctate. Face densely setose except for smooth, shiny, glabrous supraclypeal triangular area. Antennal sockets approximately level with middle of eye. Frons very weakly impressed with indistinct midlongitudinal sulcus; with moderately dense short setosity.

Mesosoma. Mesosoma smooth, shiny. Notauli indicated only by weak depressions at anterior of mesoscutum. Scutellar sulcus narrow, smooth. Propodeum simple, without carinae.

Forewing. Veins 1-M and 1-SR+M straight, vein cu-a interstitial (or virtually so), the 2nd submarginal cell rather long (i.e. vein 3-SR 0.67-0.95 times SR1), vein m-cu less than or equal to 0.5 times length of 2-SR.

Hindwing. Vein lr-m more or less straight, slightly shorter than, to slightly longer than, vein SC+RI. Apex of vein C+SC+R with one especially thickened bristle. Base of wing evenly and densely setose. Vein 2-IA absent.

Legs. Claws with large, acutely pointed, basal lobes. Telotarsi swollen in dorsal aspect compared to basal tarsal articles. Hind leg and often mid-leg (though less so) extremely laterally compressed, tibia markedly expanded in lateral aspect (Figs. 1,2,4).

Metasoma. Smooth, shiny, sparsely setose. First metasomal tergite rather long, approximately 1.5-2.0 times longer than wide, and without carinae. Second tergite transverse, with midlongitudinal carina. Third to seventh tergites without transverse grooves subbasally or subposteriorly, without anterolateral areas, and membranous posteriorly. Hypopygium not extending beyond apex of metasoma, pointed in lateral aspect. Ovipositor (part exerted beyond apex of metasoma) approximately two-thirds length of metasoma, with a pre-apical dorsal nodus and apicoventral serrations.

Male genitalia. Digitus with two rather small, well separated apical teeth. Parameres not extending beyond base of digitus; setation restricted to a fairly narrow band at apex. Volsellae virtually glabrous. Basal ring moderately produced medioanteriorly, approximately as long as wide.

Internal anatomy. Rectum small with four circular rectal pads. Male with a pair of weak, pouch-shaped, intertergal gland reservoirs between abdominal tergites 7 and 8, and with similar but weaker intertergal glands between tergites 6



Figs 1-4. *Myosomatoides pennipes* (Westwood) gen. et comb. nov., Light photomicrographs of male from Brazil. 1. Habitus, lateral aspect. 2. Detail of hind leg. 3. Head and mesosoma lateral aspect. 4. Metasoma and hind legs, dorsal aspect. Scale lines: 1=2 mm; 2=0.6 mm; 3=0.7 mm, 4=0.8 mm.



and 7; abdominal tergum 8 without obvious glands.

*Etymology*.—Name based on the existing generic name *Myosoma* and the Greek suffix -oides indicating close affinity; gender masculine.

*Distribution*.—*M. myersi*: Argentina, Brazil, British Guiana, Colombia, Ecuador, and Paraguay; *M. pennipes*: Brazil (Amazonia) and Peru.

*Biology*.—*M. myersi* nom. nov. is a larval parasitoid of members of the pyralid borer genus *Diatraea*. Nothing is known of the biology of *M. pennipes* (Westwood).

#### KEY TO THE SPECIES OF MYOSOMATOIDES

- 1 Wings uniformly brown .....  
..... *M. myersi* nom. nov.
- Wings largely hyaline with the apical third of the forewing brown (Fig. 1) .....  
..... *M. pennipes* (Westwood)

#### DISCUSSION

*Myosomatoides* gen. nov. most closely resembles and is probably closely related to the small and widespread, but principally New World genus *Myosoma* Brullé. Individuals of both genera have the hind femur rather strongly laterally compressed and densely clothed with setae (Mason 1978): *Myosomatoides* differs from *Myosoma* in having an even more strongly laterally compressed hind femur and tibia (apomorphous) (Figs. 1, 2, 4), and in having the 2nd metasomal tergite 'pinched-up' in the middle so as to form a more or less complete midlongitudinal ridge (apomorphous) (Fig. 4). In *Myosoma*, the 2nd tergite totally lacks carinae, the 1st metasomal tergite is longer and narrower than in *Myosomatoides* (apomorphous) and has the flattened lateral areas absent or nearly so (apomorphous) (Mason 1978, Quicke & Wharton 1989), and often the anterolateral part of the 2nd metasomal tergite is only weakly sclerotized (apomorphous). *Myosomatoides* also resembles *Myosoma* in its complement of intertergal glands (Quicke 1990) and in the form of the male genitalia (Quicke 1988c), though in *Myosoma* there is only one tooth on the digitus (apomorphous). *Myosoma* and *Myosomatoides* appear therefore to be sister groups though at present the possibility that the

flattened hind tibiae and general habitus simply represent convergence cannot be totally excluded. As with *Myosomatoides*, members of the genus *Myosoma* are parasitoids of lepidopterous grass-stem borers including Pyralidae and Sesiidae (Maetô 1992).

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